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| APPLICATION NO.                                                           | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---------------------------------------------------------------------------|-------------|----------------------|---------------------|------------------|
| 10/601,272                                                                | 06/20/2003  | Yasushi Enokido      | MIT 10282 US        | 6440             |
| 21403                                                                     | 7590        | 11/16/2005           | EXAMINER            |                  |
| STEVEN J WEISSBURG<br>238 MAIN STREET<br>SUITE 303<br>CAMBRIDGE, MA 02142 |             |                      | MAI, NGOCLAN THI    |                  |
|                                                                           |             |                      | ART UNIT            | PAPER NUMBER     |
|                                                                           |             |                      | 1742                |                  |

DATE MAILED: 11/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/601,272

Applicant(s)

ENOKIDO, YASUSHI

Examiner

Ngoclan T. Mai

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2-12 and 14-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-12 and 14-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

#### ***Claim Rejections - 35 USC § 102***

2. Claims 2-6, 8-12, 14-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Sachs et al. (WO 00/67936 98/56566).

Sachs et al. disclose a slurry containing metal powder having particle size preferably of between 0.5 to 2 microns and a solid volume fraction of between 5 and 55, and preferably between 10 to 40 (page 8, lines 22-31). The metal powder can be silver, nickel, iron, cobalt, tungsten and molybdenum, (col. 31, l. 1-4) and is dispersed in liquid medium such as water and alcohol, (page 31, l. 7-9). Sachs et al. also teach the metal powders can be created by gas atomization. While Sachs et al. do not teach the metal powder is in spherical form, it is well known in the art that metal powder formed by gas atomization has spherical form. (see Powder Metallurgy Practice and Applications, Sands et al., pages 27-28. This reference is cited to show this fact and is not used in the rejection). Since the metal slurry taught by Sachs et al. is comprised of metal powder having the same size and shape and is dispersed in a dispersion medium with a volume % ratio of powder within the claimed range, the metal slurry taught by Sachs et al. inherently have the sediment density as claimed.

Regarding claim 3, since tap density of a material is known to depend on the composition, shape and size of the material, the silver-containing powder taught by Sachs inherently has the claimed tap density because the powder taught by Sachs et al. has the same shape and size and is of the same material as the applicant, i.e., silver, (applicant paragraph [0040]).

"Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established, In re Best, 195 USPQ 430, 433 (CCPA 1977). 'When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are

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not.' In re Spada, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. In re Best, 195 USPQ 430, 433 (CCPA 1977)."

Regarding claim 5, Sachs et al. disclose employing dispersant in the amount as claimed, page 33, l. 35 to page 34, l. 5.

Regarding claim 9, Sachs et al. teach the slurry can be deposited by a plurality of simultaneous jets employing orifice, see abstract and page 26, l. 9-14, which reads on the claimed jet printable with a print head.

Regarding claims 11 and 20, it appears the claimed viscosity of the slurry is material property. Consequently, the properties as recited in the instant claims would have inherently possessed by the teachings of the cited reference. Therefore, the burden is on the applicant to prove that the product of the prior art does not necessarily or inherently possesses characteristics attributed to the claimed product. In re Spade, 911 F.2d 705, 708, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990), In re Best, 195 USPQ 430 and MPEP § 2112.01.

"Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established, In re Best, 195 USPQ 430, 433 (CCPA 1977). 'When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.' In re Spada, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. In re Best, 195 USPQ 430, 433 (CCPA 1977)."

Regarding claims 14-15, Sachs et al. teach continuous set printing at page 52, l. 11 to page 53, l. 11.

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***Claim Rejections - 35 USC § 103***

3. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sachs et al. in view of Kudas et al (art of record).

The difference between the claim and Sachs et al. is that Sachs et al. do not teach mixing the slurry by ultrasonic vibration.


Kudas et al teach that it is known to those in the art that micrometer-sized particles often form soft agglomerates as a result of their relatively high surface energy(compared to larger particles) and it is also known to those skilled in the ad that soft agglomerates may be dispersed easily by treatments such as exposure to ultrasound in a liquid medium, col. 33, lines 19-38.

It would have been obvious to one of ordinary skill in the ad at the time the invention was made to mix the slurry containing micron-sized metal particles in organic solvent taught by Sachs et al. by ultrasonic vibration as this is taught to improve the dispersability of the particles by Kudas.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoclan T. Mai whose telephone number is (571) 272-1246. The examiner can normally be reached on 9:30-6:00 PM Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Ngoclan T. Mai  
Primary Examiner  
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